

W Claim:

1. A system for treating plasma comprising tubing adapted to be coupled to a plasma source,
a filter coupled to the tubing to separate cellular matter from the plasma conveyed from the source,
a transfer container coupled to the tubing to receive cellular matter-reduced plasma from the filter,
a source of photoactive material to be mixed with the plasma, and
the tubing including a path to vent air from the transfer container in a path that bypasses the filter.
2. A system according to claim 1 wherein the source of photoactive material is contained within the transfer container.
3. A system according to claim 1 wherein the transfer container is made, at least in part, of material that is essentially transparent to light that activates the photoactive material.
4. A system according to claim 1 and further including an overwrap enveloping the transfer container and including light filtering material that absorbs light that activates the photoactive material.
5. A system according to claim 4 wherein the overwrap includes a vapor barrier material.
6. A system according to claim 4 wherein the photoactive material comprises methylene blue, and
wherein the light filtering material

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17. A system according to claim 1
wherein the filter removes leukocytes.

a first filtration media coupled to the tubing to separate a first species of cellular matter from the plasma conveyed from the source,

a transfer container coupled to the tubing to receive cellular matter-reduced plasma from the first and second filtration media, and

19. A system according to claim 18 wherein the tubing includes a path to vent air from the transfer container in a path that bypasses the first and second filtration media.

21. A system according to claim 18 wherein the transfer container is made, at least in part, of material that is essentially transparent to light that activates the photoactive material.

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barrier material.

methylene blue, and

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phtalocyanine pigments.

material that accommodates plasma storage.

transfer container.

absorbs light that activates the photoactive material.

methylene blue, and

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phtalocyanine pigments.

31. A system according to claim 18

wh rein the photoactive material includes methylene blue.

40. A kit according to claim 39 wherein the light filtering material includes a blue material.

41. A kit according to claim 40 wherein the blue material includes phtalocyanine pigments.

42. A kit according to claim 38 wherein the photoactive material includes psoralen.

43. A kit according to claim 42 wherein the light filtering material includes a red material.

44. A kit comprising tubing adapted to be coupled to a plasma source,

5 a filter coupled to the tubing to remove cellular matter from the plasma,

a transfer container coupled to the tubing to receive cellular matter-reduced plasma from the filter,

10 a source of photoactive material to be mixed with the plasma, and

an overwrap enveloping at least a portion of the kit and including light filtering material that absorbs light that activates the photoactive material.

45. A kit according to claim 44 wherein the photoactive material includes methylene blue.

46. A kit according to claim 45 wherein the light filtering material includes a blue material.

47. A kit according to claim 46 wherein the blue material includes

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phtalocyanin pigments.

48. A kit according to claim 44
and further including instructions for using
the kit following removal of the overwrap in
accordance with a method comprising the steps of

5 conveying plasma through the tubing
from the source through the filter to separate
cellular matter including leukocytes from the plasma,
conveying cellular matter-reduced
plasma through the tubing from the filter to the
10 transfer container,

mixing the photoactivated material with
the plasma, and
exposing leukocyte-reduced plasma mixed
with the photoactive material to light that activates
15 the photoactive material.

49. A kit comprising
tubing adapted to be coupled to a plasma
source to convey plasma,

5 a filter coupled to the tubing to separate
cellular matter from plasma conveyed from the source,
a transfer container having a chamber that
holds a photoactive material, the chamber
communicating with the tubing to receive cellular
matter-reduced plasma from the filter, the chamber
10 having a wall made, at least in part, from material
that is essentially transparent to light that
activates the photoactive material, and

an overwrap enveloping at least a portion of
the kit and including material that absorbs light that
15 activates the photoactive material.

50. A kit according to claim 49
wherein the photoactive material includes
methylene blue.

51. A kit according to claim 50

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wherein the light filtering material includes a blue material.

52. A kit according to claim 51 wherein the blue material includes phtalocyanine pigments.

53. A kit according to claim 49 and further including instructions for using the kit following removal of the overwrap in accordance with a method comprising the steps of

5 conveying plasma through the tubing from the source through the filter to separate cellular matter including leukocytes from the plasma, conveying cellular matter-reduced plasma through the tubing from the filter to the transfer container chamber, 10 mixing the photoactivated material with leukocyte-reduced plasma within in the transfer container chamber, and

15 exposing the transfer container chamber to light that activates the photoactive material mixed within the chamber with the leukocyte-reduced plasma.

54. A kit according to claim 53 wherein the instructions include the step of storing the plasma in the transfer container chamber after the exposing step.

55. A kit comprising tubing adapted to be coupled to a plasma source to convey plasma,

5 a filter coupled to the tubing to separate cellular matter from plasma conveyed from the blood source,

a transfer container coupled to the tubing to receive cellular matter-reduced plasma from the filter,

10 a source of liquid photoactive material to

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be mixed with the plasma, and

an overwrap enveloping at least a portion of the kit and including material that both absorbs light that activates the photoactive material and reduces liquid vapor loss from the kit.

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56. A kit according to claim 55 wherein the material of the overwrap includes an oriented polymer.

57. A kit according to claim 56 wherein the oriented polymer includes polypropylene.

58. A kit according to claim 55 wherein the photoactive material includes methylene blue.

59. A kit according to claim 58 wherein the light filtering material includes a blue material.

60. A kit according to claim 59 wherein the blue material includes phtalocyanine pigments.

61. A kit according to claim 55 and further including instructions for using the kit following removal of the overwrap in accordance with a method comprising the steps of

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conveying plasma through the tubing from the source through the filter to separate cellular matter including leukocytes from the plasma,

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conveying cellular matter-reduced plasma through the tubing from the filter to the transfer container,

mixing the photoactivated material with the plasma, and

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exposing cellular matter-reduced plasma mixed with the photoactive material to light that activates the photoactive material.

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62. A kit according to claim 38 or 44 or 49
or 55
wherein the overwrap envelops the entire
kit.

63. A method for treating plasma carrying
contaminants and at least two species of cellular
matter capable of entraining contaminants, the method
comprising the steps of

separating a first species of cellular
matter by filtration through a first filter media,
thereby removing contaminants entrained within the
first species of cellular matter,

separating a second species of cellular
matter by filtration through a second filter media,
thereby removing contaminants entrained within the
second species of cellular matter,

adding to the plasma a photoactive material,
and

emitting radiation at a selected wavelength
into the plasma to activate the photoactive material
and thereby eradicate the contaminant that is free of
entrainment by cellular matter.

64. A method for treating plasma comprising
the steps of

separating from the plasma leukocytes by
filtration through a first filter media,

separating from the plasma platelets by
filtration through a second filter media,

adding to the plasma a photoactive material,
and

emitting radiation at a selected wavelength
into the plasma to activate the photoactive material.

65. A method for treating a plasma carrying
contaminants and cellular matter capable of entraining

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contaminants, the method comprising the steps of
conveying plasma through a first path
5 through a filter that separates cellular matter from
the plasma, thereby removing contaminants entrained
within the cellular matter,

conveying the plasma from the filter through
a second path that includes an attached transfer
10 container,

mixing within the transfer container the
plasma with a photoactive material to form a plasma
mixture,

conveying a portion of the plasma mixture
15 from the transfer container through a flush path that
includes the second path to thereby expose
contaminants in the second path to the photoactive
material,

severing the second path to separate the
20 transfer container from the filter, the transfer
container, after severance from the filter, carrying
a remnant of the second path, and

emitting radiation into the transfer
container at a selected wavelength to activate the
25 photoactive material in the plasma mixture and thereby
eradicate the contaminant that is free of entrainment
by cellular matter.

66. A method according to claim 66
wherein the flush path by passes the filter.

67. A method according to claim 66
and further including the step of venting
air from the transfer container through the flush
path.

68. A method according to claim 67
wherein the flush path by passes the filter.

69. A method according to claim 66
and further including the step of storing

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the plasma mixture in the transfer container after the
radiation emitting step.

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